

Assessment of motor performance of children with special educational needs for the design of interventional physical education programs

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Background / Significance

The direct detection of developmental problems is beneficial for children with special educational needs (SEN) because it can help to minimize the long-term effects for their lives and result in a smooth integration into the community as an adult (Στασινός, 2016: 31, Visser et al., 2012). Various test batteries are used in order to assess the level of motor development so as to design high-quality interventional programs in pre-school age (Connolly et al., 2006; Visser et al., 2012). Several surveys abroad have indicated that the motor development of students with SEN has a slower pace than conventional development children as well as the positive influence of the interventional programs (Erim & Caferoğlu, 2017; Niklasson et al., 2017; Nonis & Jernice, 2014; Visser et al., 2012). However, in Greece, the motor development of children in the school context has not been systematically investigated. It is therefore important to study the motor performance of children with SEN in order to create developmentally appropriate intervention programs.

Research Questions

- What is the motor performance of SEN children of this study?
- Which motor skills seem to be more difficult to develop?

Method

Participants

In this survey participated the population of SEN preschool students of the Prefecture of Achaia during the school year 2015-2016 (N=36) and average age $M_{age}=73,22$ months.

Data collection

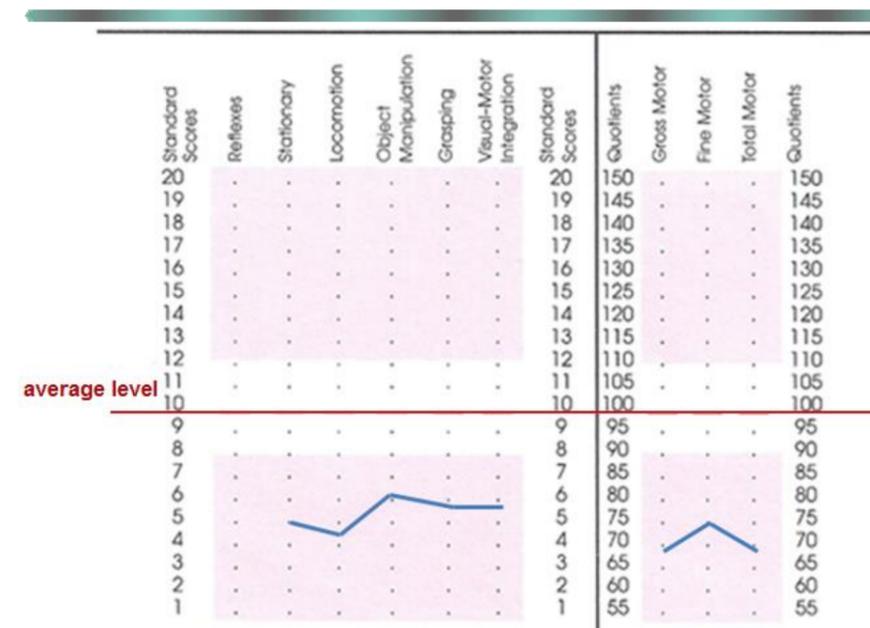
PDMS-2 assessment battery was used to collect data. The items of the test are grouped into 6 subtests (reflexes, stationary, locomotion, object manipulation, grasping, visual-motor integration) (Fewell & Folio, 2000). Reflexes items were not examined because they refer to the age of up to 11 months. All ethical rules were taken into account for the conduct of the survey (permission was obtained from the Education Policy Institute as well as consent of parents and children). Each child was isolated and examined individually in a specially designed area that served the requirements of the PDMS-2.

Data analysis

Research data was quantitatively analyzed with the help of the SPSS v.21 program in order to identify the children's level of motor

development. A qualitative analysis followed in order to describe the skills that seem to make it more difficult to develop for SEN children so as to propose interventional programs.

Results



Standard scores and Quotients in the five subtests in comparison to the average level according to PDMS-2

According to the graph, the average motor performance of the population was classified as poor ($M_{TMA}=69,44$, $SD=13,97$) and in particular it reflected the growth of children aged $M_{ae}=37,61$ months. More specific difficulties of students with SEN are described below:

Gross motor development

- lack of control of their weight distribution resulting in a lack of static and dynamic balance
- weakness of the muscles resulting in difficulty in performing jumping skills

Fine motor development

- difficulty in using their fingers independently in order to perform complex small movements (e.g. buttoning/unbuttoning buttons)
- difficulty in adjusting finger movements to handle small objects (markers, scissors, small cubes).

General difficulties

Regardless of the type of skills tested, a general difficulty was observed in the simultaneous response to more than one stimulus and the

coordination of more than one movement together.

Discussion

The results are not representative of the entire population of Greek SEN students and therefore they cannot be generalized. However, they constitute a trend of the motor development of SEN pupils that can be taken into account in order to create interventions for motor improvement. The teacher can offer a variety of stimuli to induce the child's motor involvement (e.g. use of sports equipment such as balls and obstacles during the free play). Moreover, an effective intervention should focus on the student's specific weaknesses, be of interest to him, and consist of simple understandable commands. In conclusion, all the above are observations that could lead to the design of appropriate interventional physical education programs.

References

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